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DEC 27 2004
PATENT & TRADEMARK OFFICE

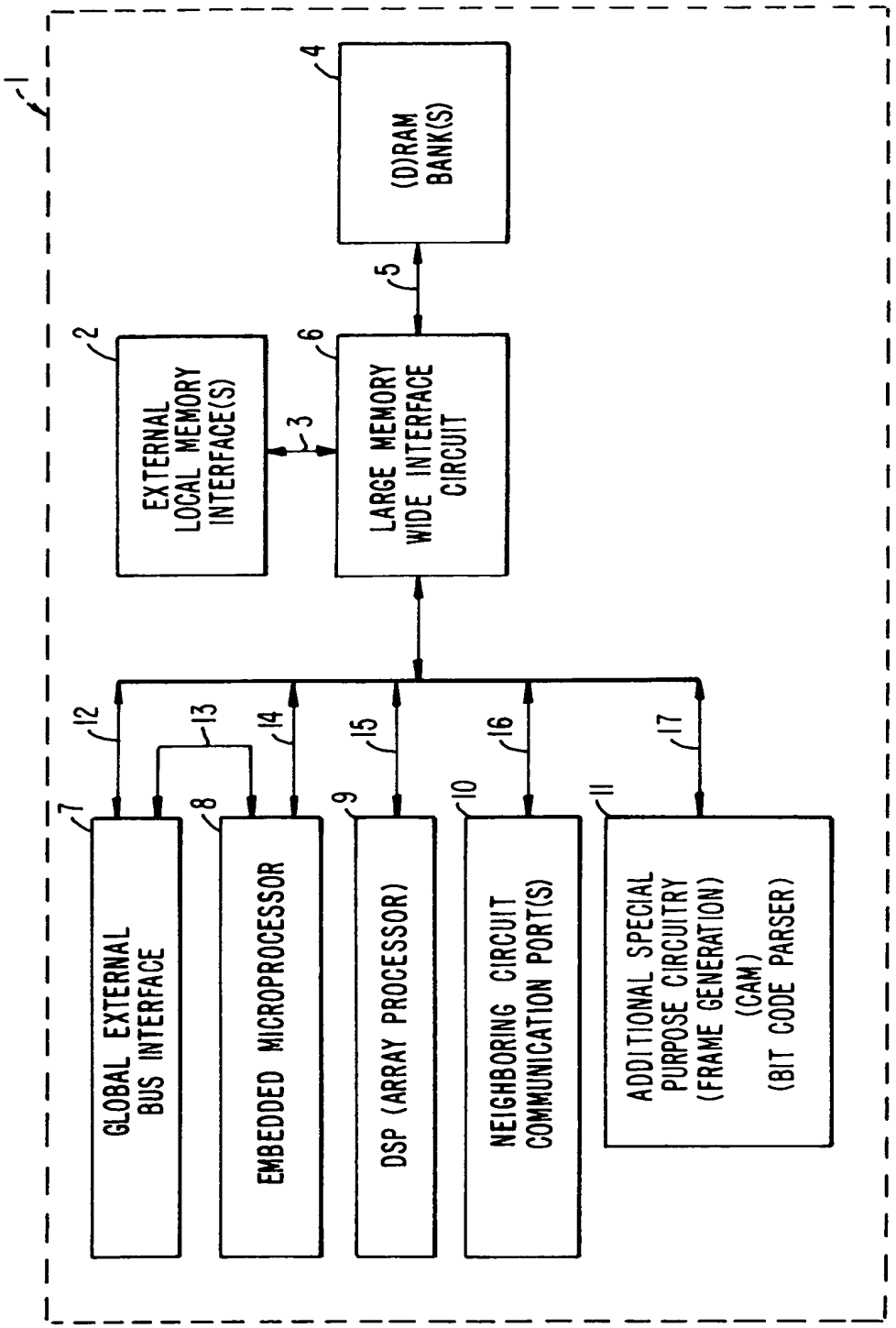

FIG. 1.

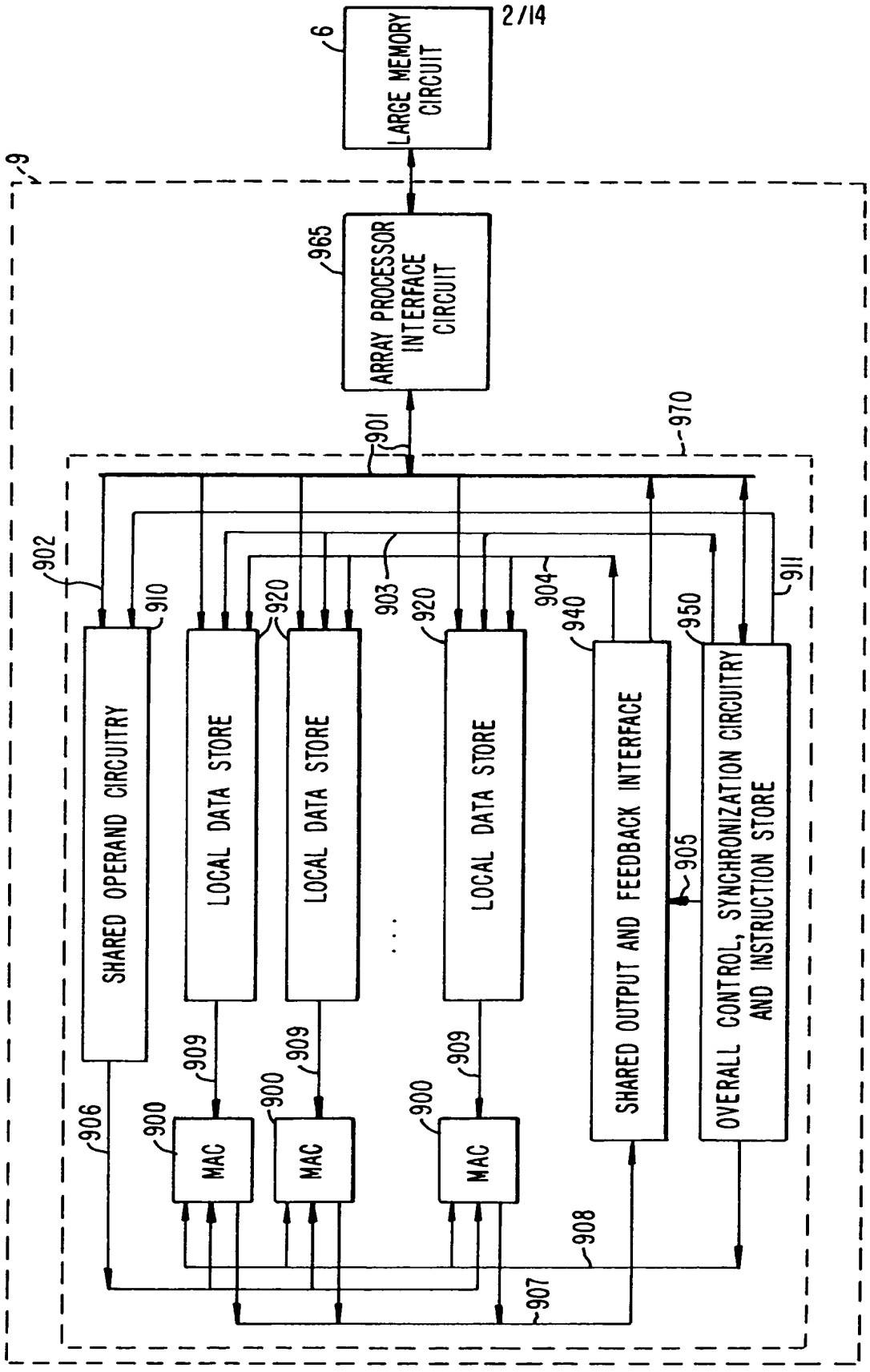
2/14
6
LARGE MEMORY CIRCUIT
9
965
ARRAY PROCESSOR INTERFACE CIRCUIT
901
970
902
910
920
903
920
904
940
950
911
SHARED OPERAND CIRCUITRY
LOCAL DATA STORE
LOCAL DATA STORE
LOCAL DATA STORE
SHARED OUTPUT AND FEEDBACK INTERFACE
OVERALL CONTROL, SYNCHRONIZATION CIRCUITRY AND INSTRUCTION STORE
905
909
909
909
900
900
900
MAC
MAC
MAC
906
908
907

FIG. 2.

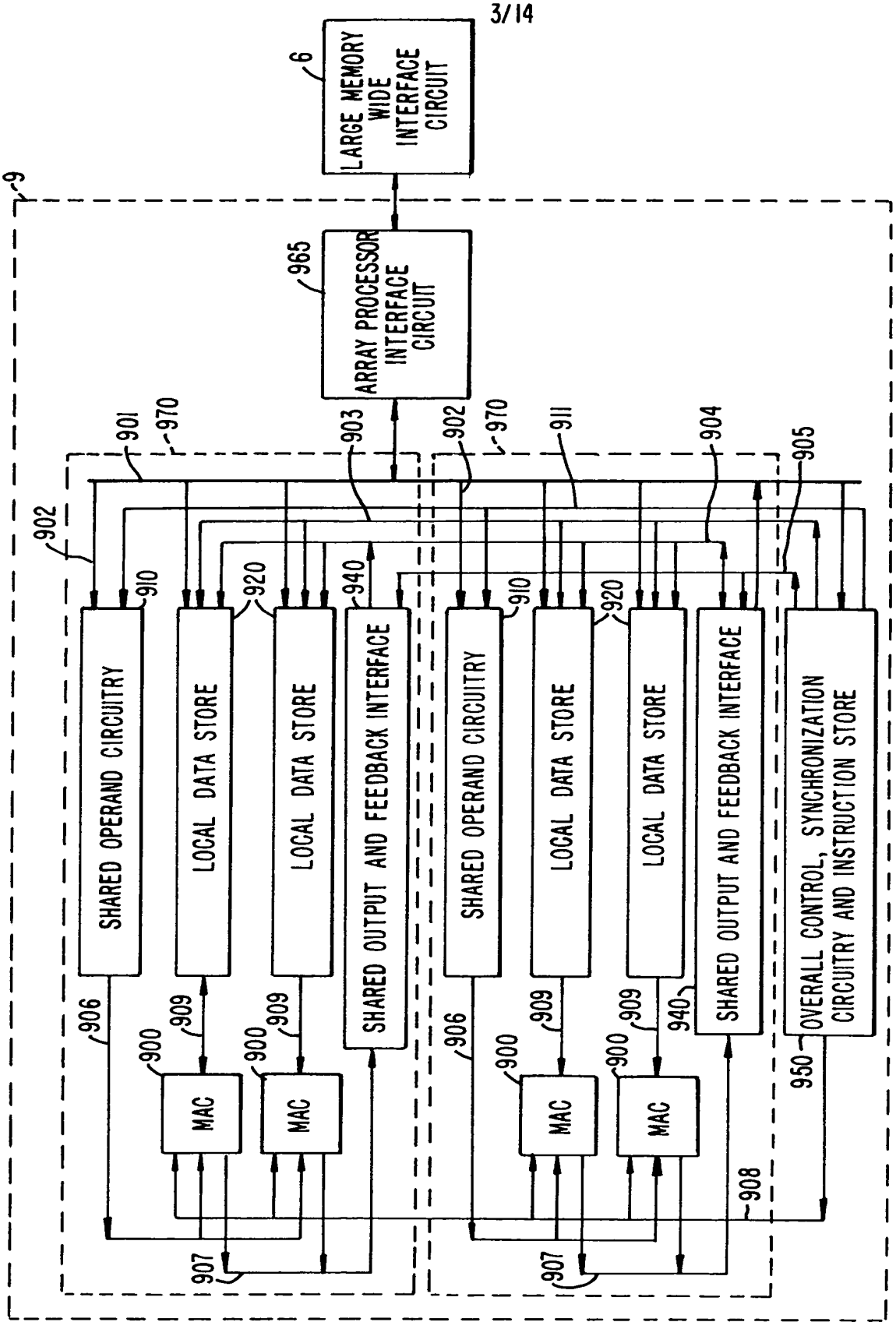
6
LARGE MEMORY WIDE INTERFACE CIRCUIT
9
965
ARRAY PROCESSOR INTERFACE CIRCUIT
901
970
903
902
970
911
904
905
902
910
920
940
910
920
SHARED OPERAND CIRCUITRY
LOCAL DATA STORE
LOCAL DATA STORE
SHARED OUTPUT AND FEEDBACK INTERFACE
SHARED OPERAND CIRCUITRY
LOCAL DATA STORE
LOCAL DATA STORE
SHARED OUTPUT AND FEEDBACK INTERFACE
OVERALL CONTROL, SYNCHRONIZATION CIRCUITRY AND INSTRUCTION STORE
906
909
900
MAC
909
900
MAC
906
909
900
MAC
909
900
MAC
940
950
908
907
907

FIG. 3.

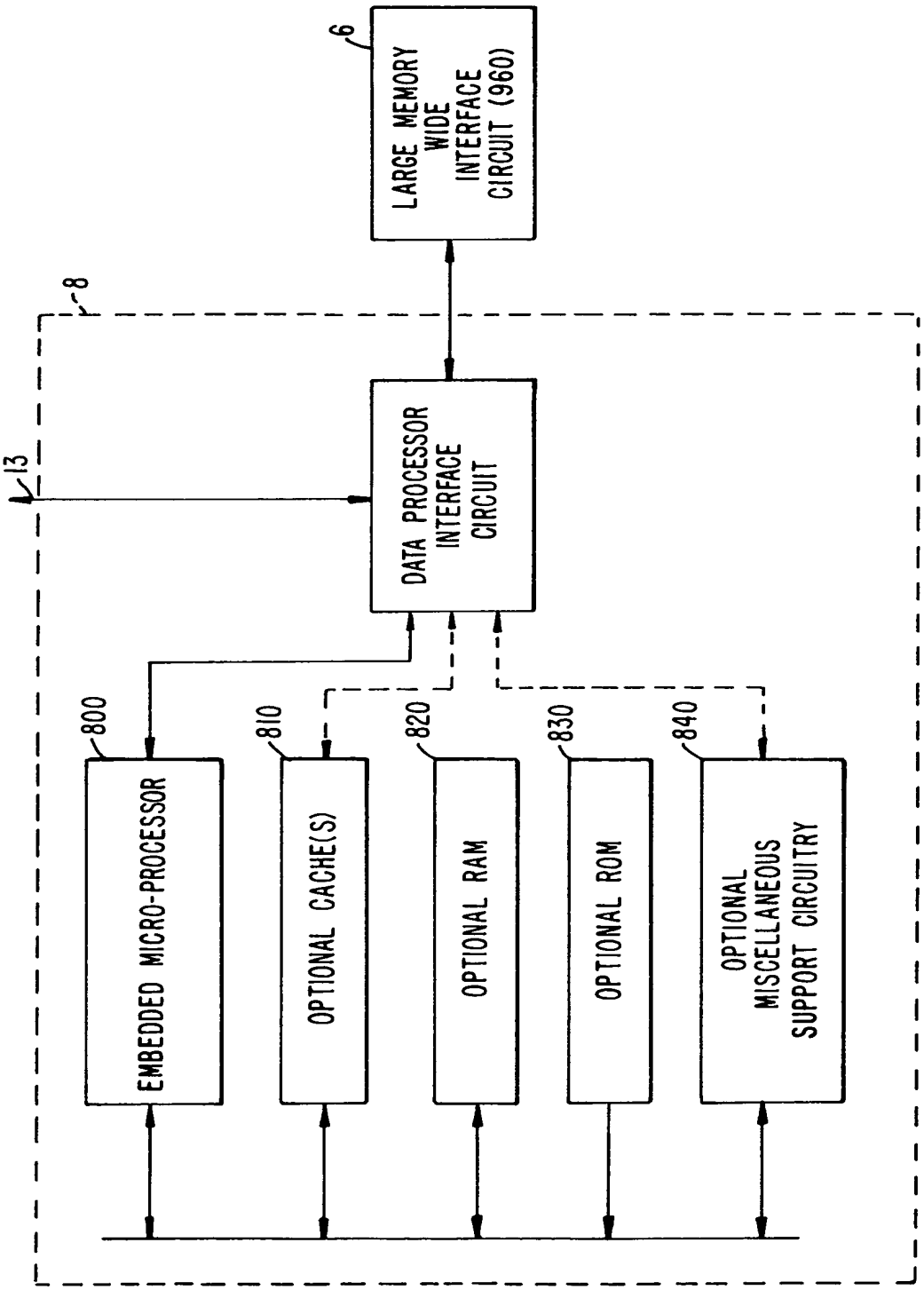
6
LARGE MEMORY WIDE INTERFACE CIRCUIT (960)
8
13
DATA PROCESSOR INTERFACE CIRCUIT
800
EMBEDDED MICRO-PROCESSOR
810
OPTIONAL CACHE(S)
820
OPTIONAL RAM
830
OPTIONAL ROM
840
OPTIONAL MISCELLANEOUS SUPPORT CIRCUITRY

FIG. 4.

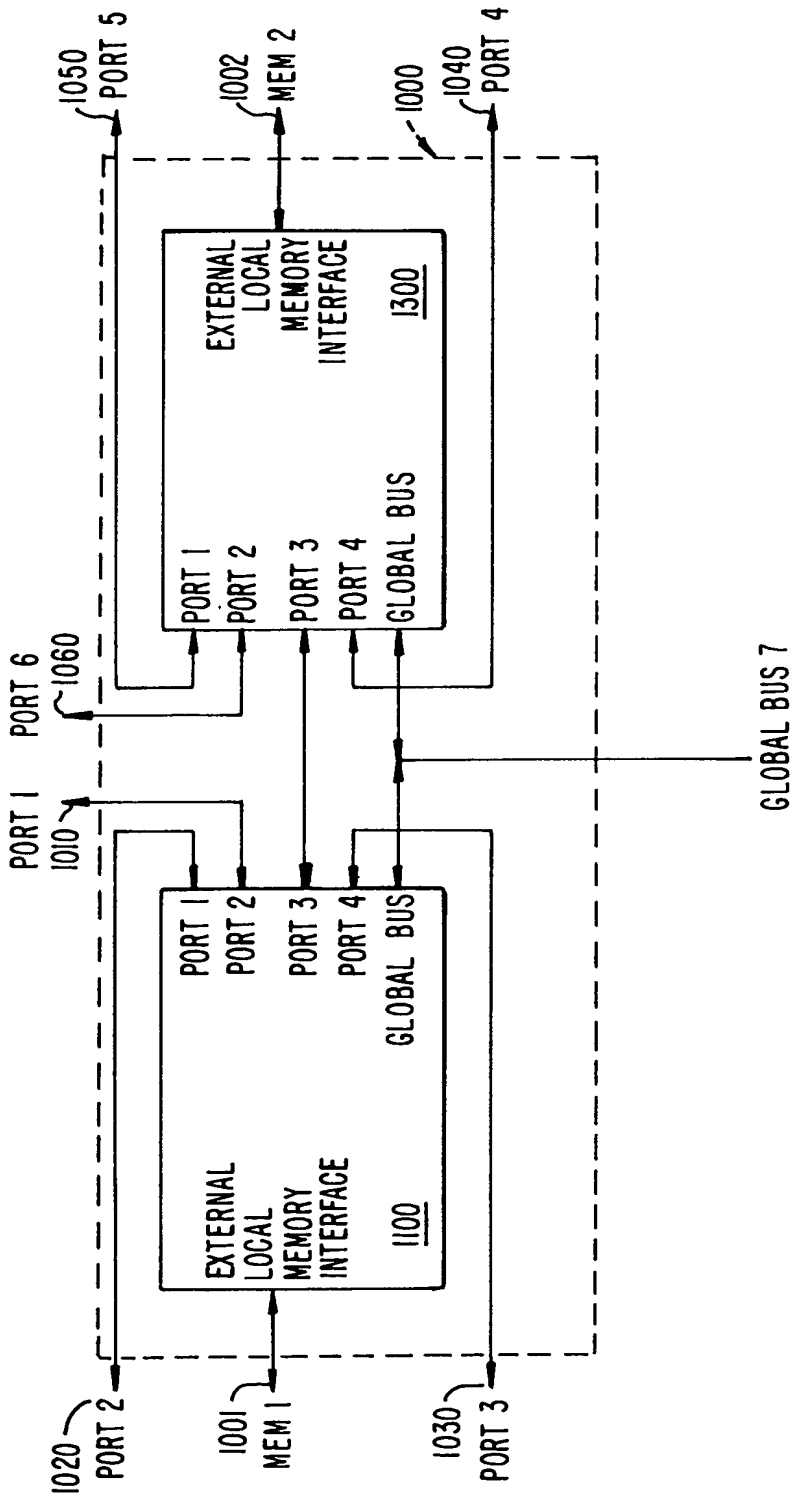
1050
PORT 5
1002
MEM 2
1000
1040
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE
1300
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
PORT 6
1060
PORT 1
1010
GLOBAL BUS 7
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
EXTERNAL LOCAL MEMORY INTERFACE
1100
1020
PORT 2
1001
MEM 1
1030
PORT 3

FIG. 5.

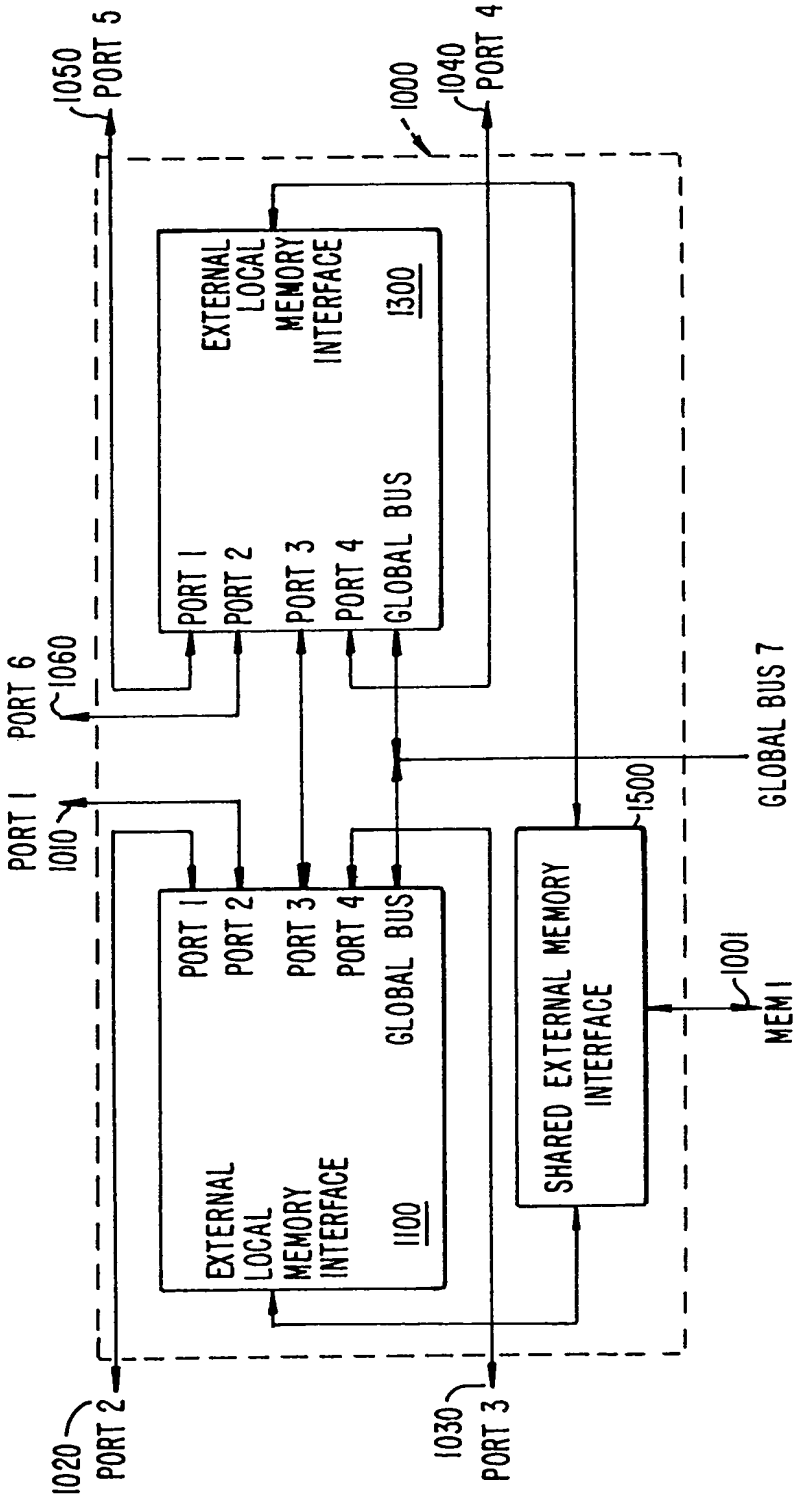
1050
PORT 5
1040
PORT 4
1000
EXTERNAL LOCAL MEMORY INTERFACE
1300
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
PORT 6
1060
PORT 1
1010
GLOBAL BUS 7
1500
SHARED EXTERNAL MEMORY INTERFACE
1001
MEM 1
EXTERNAL LOCAL MEMORY INTERFACE
1100
1020
PORT 2
1030
PORT 3

FIG. 6.

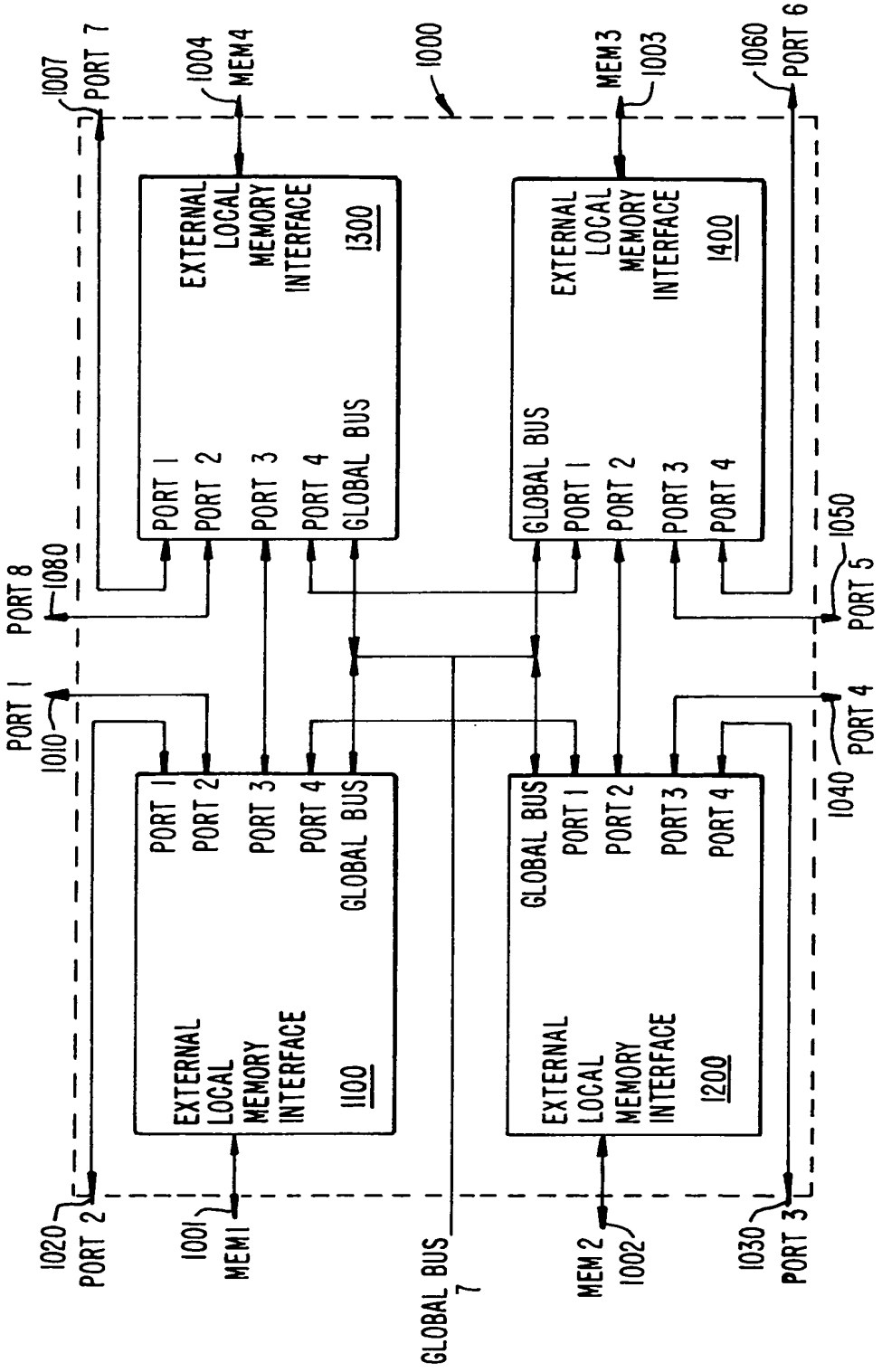
1000
1007
PORT 7
1004
MEM4
MEM3
1003
1060
PORT 6
EXTERNAL LOCAL MEMORY INTERFACE
1300
EXTERNAL LOCAL MEMORY INTERFACE
1400
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
PORT 8
1080
1050
PORT 5
PORT 1
1010
1040
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE
1100
EXTERNAL LOCAL MEMORY INTERFACE
1200
1020
PORT 2
1001
MEM1
GLOBAL BUS
7
MEM 2
1002
1030
PORT 3

FIG. 7.

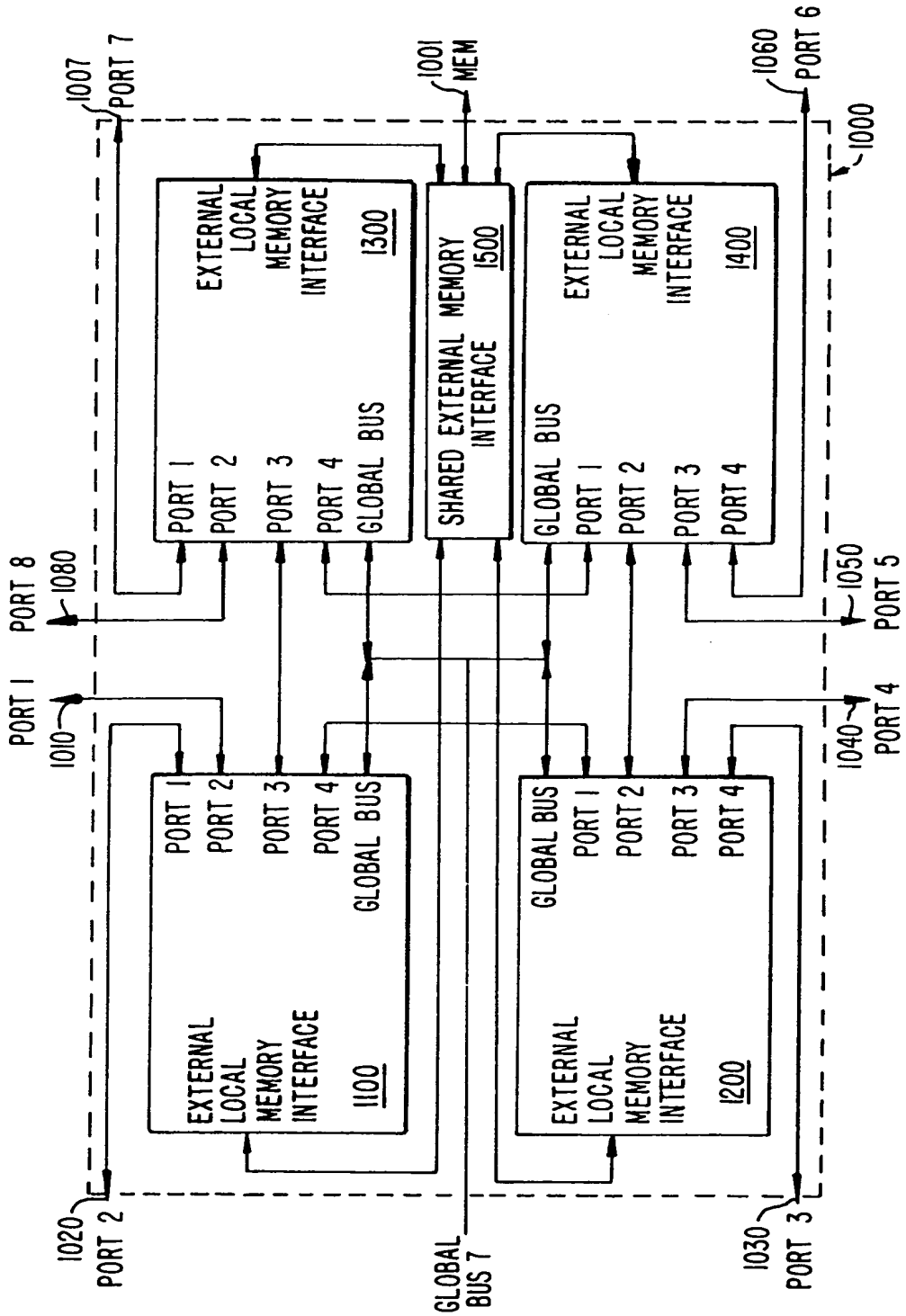
1007
PORT 7
1001
MEM
1060
PORT 6
1000
EXTERNAL LOCAL MEMORY INTERFACE 1300
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
SHARED EXTERNAL MEMORY INTERFACE 1500
GLOBAL BUS
PORT 1
PORT 2
PORT 3
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE 1400
PORT 8
1080
1050
PORT 5
PORT 1
1010
1040
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE 1100
EXTERNAL LOCAL MEMORY INTERFACE 1200
1020
PORT 2
GLOBAL BUS 7
1030
PORT 3

FIG. 8.

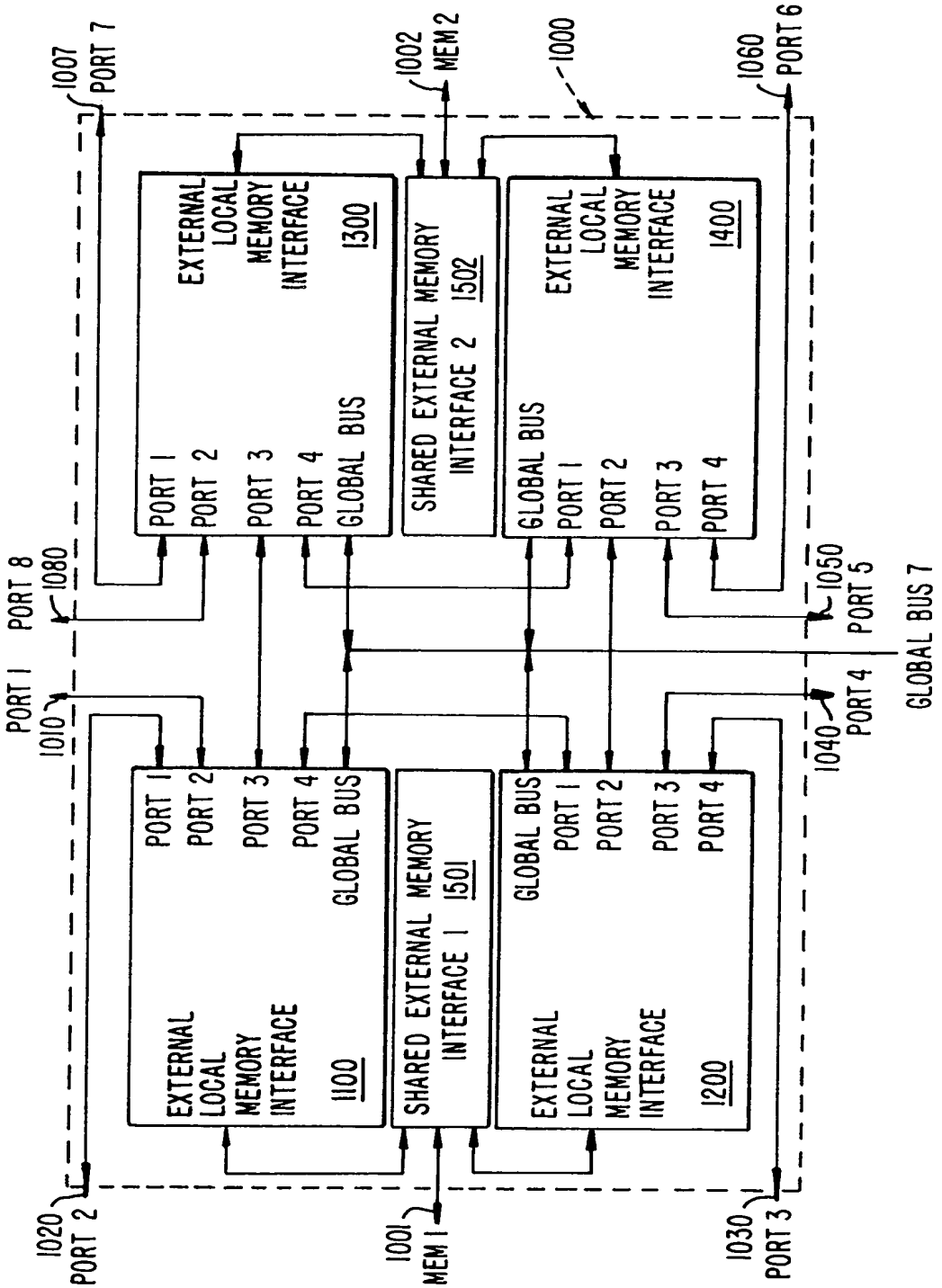
1007
PORT 7
1002
MEM 2
1000
1060
PORT 6
EXTERNAL LOCAL MEMORY INTERFACE 1300
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
SHARED EXTERNAL MEMORY INTERFACE 2 1502
GLOBAL BUS
PORT 1
PORT 2
PORT 3
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE 1400
PORT 8
1080
1050
PORT 5
GLOBAL BUS 7
PORT 1
1010
1040
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE 1100
SHARED EXTERNAL MEMORY INTERFACE 1 1501
EXTERNAL LOCAL MEMORY INTERFACE 1200
1020
PORT 2
1001
MEM 1
1030
PORT 3

FIG. 9.

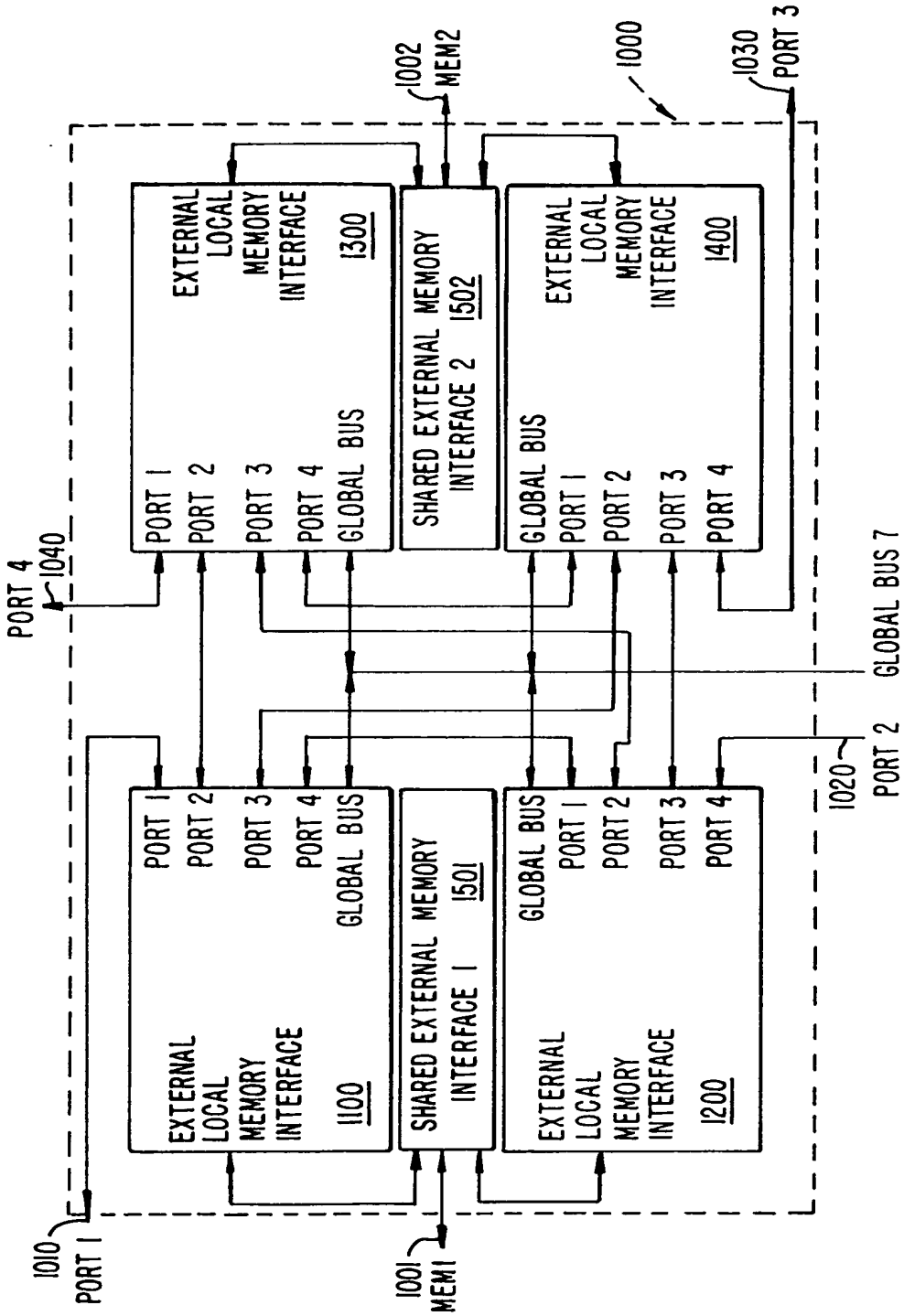
1002
MEM2
1000
1030
PORT 3
EXTERNAL LOCAL MEMORY INTERFACE 1300
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
SHARED EXTERNAL MEMORY INTERFACE 2 1502
GLOBAL BUS
PORT 1
PORT 2
PORT 3
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE 1400
PORT 4
1040
GLOBAL BUS 7
PORT 2
1020
EXTERNAL LOCAL MEMORY INTERFACE 1100
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
SHARED EXTERNAL MEMORY INTERFACE 1 1501
GLOBAL BUS
PORT 1
PORT 2
PORT 3
PORT 4
EXTERNAL LOCAL MEMORY INTERFACE 1200
1010
PORT 1
1001
MEM1

FIG. 10.

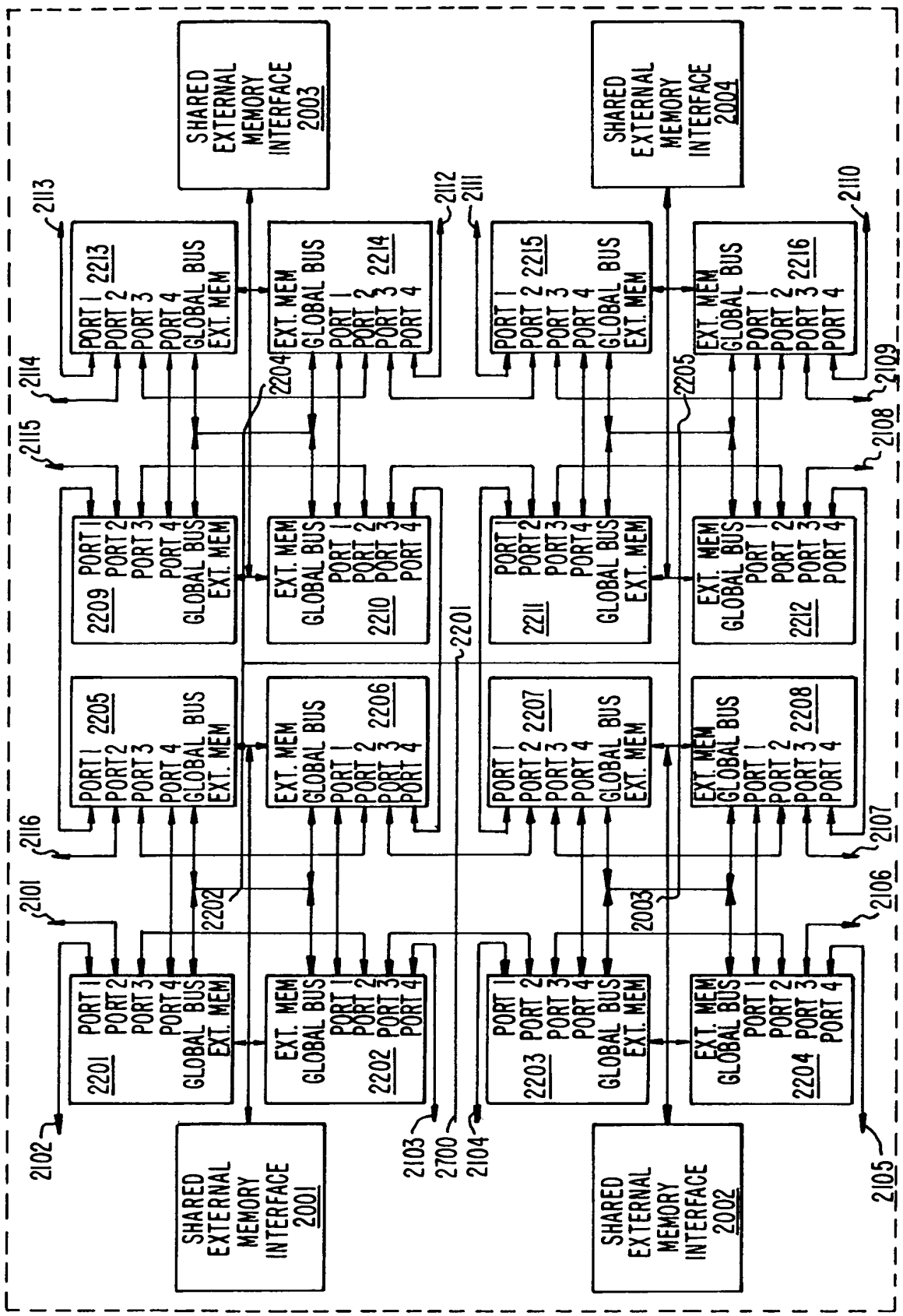
SHARED EXTERNAL MEMORY INTERFACE 2003
SHARED EXTERNAL MEMORY INTERFACE 2004
SHARED EXTERNAL MEMORY INTERFACE 2001
SHARED EXTERNAL MEMORY INTERFACE 2002
PORT 1 2213
PORT 2
PORT 3
PORT 4
GLOBAL BUS
EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 PORT 4 2214
PORT 1 PORT 2 2215 PORT 3 PORT 4 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 PORT 4 2216
2209 PORT 1 PORT 2 PORT 3 PORT 4 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 2210 PORT 4
PORT 1 PORT 2 PORT 3 PORT 4 2211 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 2212 PORT 4
PORT 1 2205 PORT 2 PORT 3 PORT 4 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 2206 PORT 4
PORT 1 PORT 2 2207 PORT 3 PORT 4 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 2208 PORT 4
2201 PORT 1 PORT 2 PORT 3 PORT 4 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 2202 PORT 4
PORT 1 PORT 2 PORT 3 PORT 4 2203 GLOBAL BUS EXT. MEM
EXT. MEM GLOBAL BUS PORT 1 PORT 2 PORT 3 2204 PORT 4
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2201
2202
2203
2204
2205
2700
2003
2204
2205

FIG. 11.

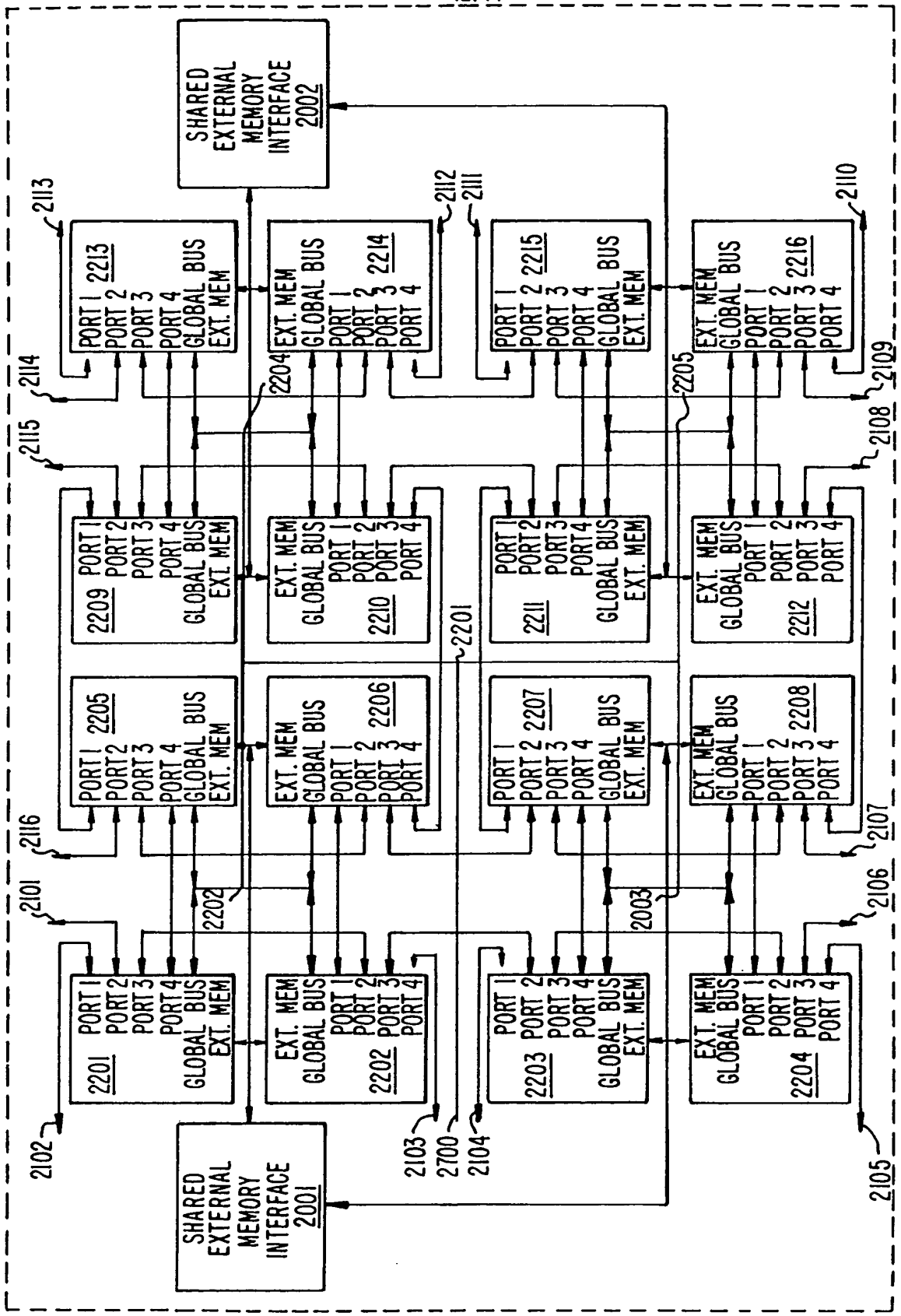
SHARED EXTERNAL MEMORY INTERFACE 2002
SHARED EXTERNAL MEMORY INTERFACE 2001
PORT 1
PORT 2
PORT 3
PORT 4
GLOBAL BUS
EXT. MEM
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2700
2201
2202
2003
2204
2205

FIG. 12.

- OVERALL PCB FOOT PRINT:
  125MM * 125MM
- EACH SIDE OF PRINTED CIRCUIT BOARD CONTAINS:
  - (4) EMBODIMENTS
  - (8) SYNCHRONOUS DRAM MODULES (168 PIN) WITH UP TO 16M BY 72 BITS EACH
  - EACH EMBODIMENT HAS 288 MBYTES OF RAM
  - BOOT ROM AND OTHER SUPPORT CIRCUITRY IS NOT DIAGRAMMED HERE

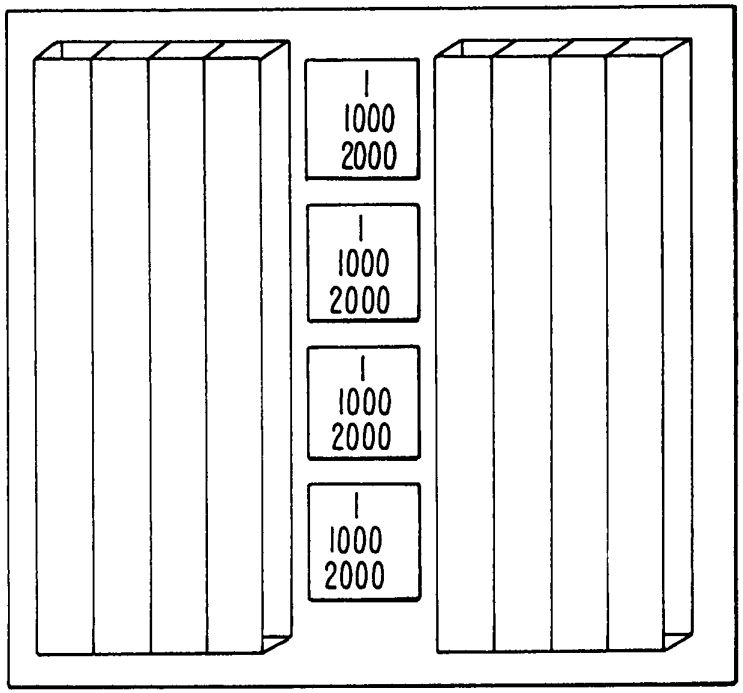

FIG. 13.

Tyrome Y. Brown, Reg. No. 46,580, (650) 326-2400
Titled: Video Frame Rendering Engine
App. No. 08/993,442 Filed: December 18, 1997
Dckt. No.: 00939A-040310US
Sheet 13 of 14

- OVERALL PCB FOOT PRINT:
  125MM * 150MM
- EACH SIDE OF PRINTED CIRCUIT BOARD CONTAINS:
  - (8) EMBODIMENTS
  - (8) SYNCHRONOUS DRAM MODULES (168 PIN) WITH UP TO 16M BY 72 BITS EACH
  - EACH EMBODIMENT HAS 144 MBYTES OF RAM
  - BOOT ROM AND OTHER SUPPORT CIRCUITRY IS NOT DIAGRAMMED HERE

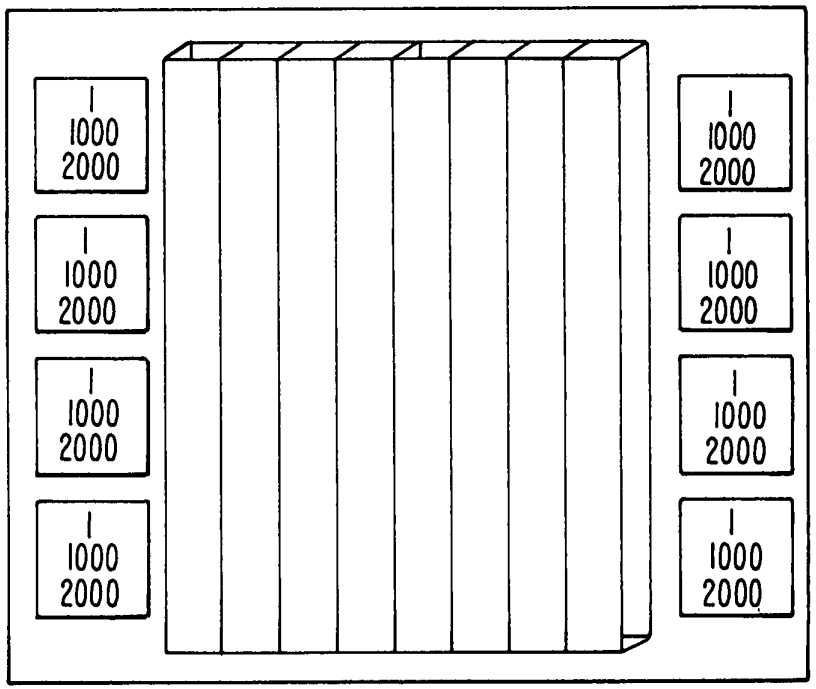

FIG. 14.

Tyrome Y. Brown, Reg. No. 46,580, (650) 326-2400
Titled: Video Frame Rendering Engine
App. No. 08/993,442 Filed: December 18, 1997
Dckt. No.: 00939A-040310US
Sheet 14 of 14